REMARKS

The rejection of claims 1,3 and 5 under 35 USC 102(b) as being anticipated by US Patent No. 5/017,497 issued to Gerard D. Grooth et al is respectfully traversed.

Applicant has amended claims 1,2,3 and 5 to more clearly define the subject invention. The pollen sensor as defined in claims 1,3 and 5 include a first receiver for selectively measuring the intensity (Ip) of light beams from the detection zone polarized parallel to the polarized light beam generated from the illuminating portion and a second receiver for measuring the intensity (Is) of light beams polarized perpendicular to the polarized light beam generated from the illuminating portion. The claims have been further amended so that it is clear that the first and second receivers are aligned radially relative to one another and to the incident optical axis to form complimentary angles of substantially equal dimension with respect to the incident optical axis and with each receiver spaced radially apart. The cited reference Grooth et al '497 uses a completely different arrangement from that taught and claimed in the subject invention and for an entirely different purpose. The flow cytometer apparatus 12 taught in Grooth '497 produces a coherent light beam 26 from a source of light 18 having an incident optical axis along the Z axis which intersects the longtitudinal axis X extending through the flow chamber 16 through which particles in a liquid suspension are passed. The light beam 26 is linearly polarized by the polarizing filter 32 with scattered light collected by a lens 42 to form a polarized scattered light beam 44 in the Y direction. Grooth '497 defines in column 6 line 29-34 the scattered light beam 44 as forming the total of all orthogonally scattered light. It is this polarized scattered light beam 44 which is designed to be measured by Grooth '497 and contains both polarized and depolarized electric field vectors produced by particle scattering of the polarized incident light (see column 6 lines 35-39). Grooth '497 then employs a conventional beam splitter to divide the light beam 44 into two beams with the same polarization. The split beams are directed at the photo detector 20 and the photo detector 24 respectively. These photo detectors are not radially aligned relative to the incident optical axis Z and are not aligned relative to one another to form complimentary angles of substantially equal dimension with respect to the incident optical axis Z. Furthermore these photo detectors are not arranged nor intended to selectively measure the intensity (Ip) of light beams from the detection zone polarized parallel to the polarized light beam of the illumination source and to measure the intensity (Is) of light beams from the detection zone polarized perpendicular to the polarized light beam of the illuminating source as required in the claims of the subject application.

Accordingly the rejection of claims 1,3 and 5 under 35 USC 102(b) should be withdrawn.

It should further be noted that the subject invention, as claimed, discriminates between pollen particles and other floating particles by computing the degree of polarization as an arithmetic value from the intensity (Ip) of the polarized light beam detected by the first receiver and the intensity (Is) of the polarized light beam detected by the second receiver. In Grooth et al '497 the polarized light beam 44 is split into two beams having the same polarization. Moreover the analyzer 14 is not designed for computing the degree of polarization of floating particles based upon the intensity (Ip) and the intensity (Is) of two different polarized light beams received from the first and second receivers. Furthermore, in the subject application the two receivers are aligned in different directions radially spaced apart from one another to form complimentary angles of substantially equal dimension relative to the incident optical axis for measuring different scattered light beams in a parallel and perpendicular directions of polarization relative to the incident optical axis. Accordingly, as indicated above, the rejection of claims 1,3 and 5 under 35 USC 102 should be withdrawn.

The rejections of claims 2 and 4 under 35 USC 103(a) as being unpatentable over Grooth et al '497 is respectfully traversed. Claims 2 and 4 are dependent claims which depend from claims 1 and 3 respectively.

As indicated above with regard to claims 1 and 3 the first and second receivers are aligned in different directions relative to one another to form complimentary angles of substantially equal dimensions relative to the incident optical axis. This is not taught or suggested in Grooth et al. Furthermore as explained above the analyzer 14 in Grooth '497 is not being used for computing the degree of polarization as an arithmetic value from the intensity (Ip) of the polarized light beam detected by the first receiver and the intensity (Is) of the polarized light beam detected by the second receiver.

For all of the above reasons the rejection of claims 2 and 4 under 35 USC 103(a) should be withdrawn.

Applicant has added claims 6 and 7 which are also dependent claims dependent upon claims 1 and 3 limited to a preferred angle of separation between the first receiver and the second receiver.

Reconsideration and allowance of claims 1-7 is respectfully solicited.

Respectfully submitted
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CERTIFICATE OF MAILING

I hereby certify that this *Amendment* is being deposited with the United States Postal Service via First Class Mail addressed to Mail Stop AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 15, 2006.

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